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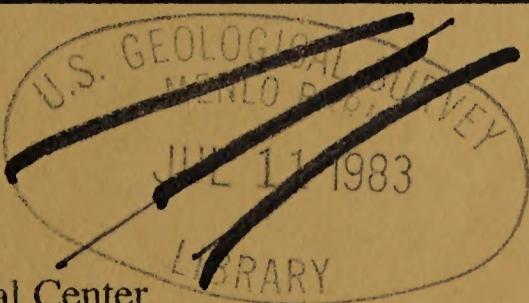
# YOKAYO GRAZING

## draft environmental impact statement



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#### NOTICE TO READERS

Please keep this draft environmental impact statement for possible use as part of the final report. Council on Environmental Quality regulations (43 CFR 1503.4(c)) provide for circulation of abbreviated final EISs where major changes to the draft are not required. If the public review requires only minor changes to the draft, then the final EIS will consist of this draft and a supplement containing public comments, responses to comments, and necessary changes and corrections. This procedure will cut printing costs and speed up the environmental process.

Please write or type responses in black ink, as they may be reproduced in the final EIS or supplement.



# United States Department of the Interior

BUREAU OF LAND MANAGEMENT

UKIAH DISTRICT OFFICE

P. O. Box 940

Ukiah, California 95482-0940

IN REPLY  
REFER TO:

1792 (C-050)

June 1983

Enclosed for your review and comment is the Yokayo Grazing Environmental Impact Statement. The Ukiah District Office of the Bureau of Land Management prepared the environmental statement in accordance with Section 102(2)(C) of the National Environmental Policy Act of 1969. The statement analyzes the impacts that would result from a proposed grazing program, along with two alternatives to that program.

Comments concerning the adequacy of this statement will be considered in the preparation of the final environmental impact statement. Written comments should be received by this office no later than August 2, 1983 in order to be included in the final statement.

Comments received after the review period will be considered in the decision process, even though they may be too late to be specifically addressed in the final environmental impact statement.

Your comments should be sent to:

District Manager  
Ukiah District Office  
Bureau of Land Management  
P. O. Box 940  
Ukiah, California 95482

Sincerely yours,

*Edwin G. Katlas*

Edwin G. Katlas  
Acting District Manager



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DEPARTMENT OF THE INTERIOR

DRAFT ENVIRONMENTAL IMPACT STATEMENT

YOKAYO GRAZING PROGRAM

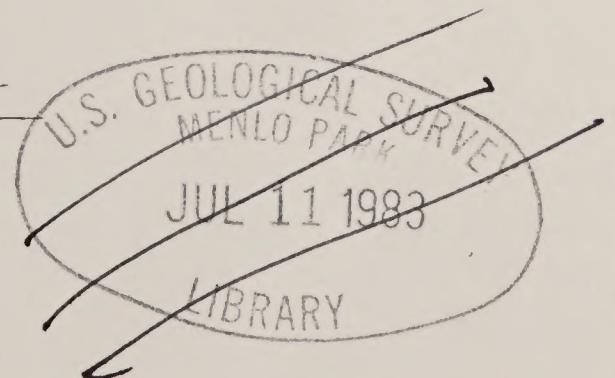
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Prepared by

BUREAU OF LAND MANAGEMENT

UKIAH DISTRICT OFFICE, CALIFORNIA

*Richard Johnson*  
State Director California  
*Eding*





## YOKAYO GRAZING ENVIRONMENTAL IMPACT STATEMENT

June 1983

Draft (X)      Final ( )      Environmental Impact Statement

1. Type of Action:      Administrative (X)      Legislative ( )

### 2. Abstract:

The Bureau of Land Management, Ukiah District, proposes a grazing program for 57,370 acres of public land in Colusa, Lake, Humboldt, Mendocino, Napa, Sonoma, Trinity, and Yolo counties, California. The proposed action is a continuation of present management (no action). Three alternatives are analyzed: (1) no grazing, (2) active management of manageable leases and elimination of non-manageable leases, and (3) active management of manageable leases and retention of the nonmanageable leases for low level management. There are no critical issues or impacts related to this program. The preferred alternative is active management of manageable leases and elimination of nonmanageable leases.

### 3. For further information contact:

District Manager  
Bureau of Land Management  
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Ukiah, California 95482-0940  
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### 4. Comments must be received by:

August 2, 1983



## SUMMARY

This environmental impact statement analyzes the environmental, social, and economic effects of a BLM-proposed grazing program and alternatives in the Ukiah District, California. The analysis will aid in finalizing several management framework plans.

The proposed action is a continuation of present management (no action) and is low level in nature. Alternatives are (1) elimination of authorized grazing, (2) active management of manageable leases with elimination of non-manageable leases, and (3) active management of manageable leases with retention of nonmanageable leases on a low-level basis. Active management would involve mulch management, monitoring, some range improvements, and certified actual-use billing on some allotments.

There were no critical issues identified during scoping efforts, and no significant impacts would result from the proposal or alternatives. Minor, site-specific impacts will be addressed and corrected, where feasible, on a case-by-case basis.

The preferred alternative is active management of manageable leases and elimination of nonmanageable leases. This alternative is a realistic management strategy; it places money and effort where the best resource use and environmental protection will be made. It also eliminates legal grazing on sites considered unmanageable or unsuitable for grazing by domestic animals. Incidental trespass on scattered parcels may be a recurring problem, so periodic monitoring of these areas will be undertaken.



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## CHAPTER 1

### PURPOSE AND NEED

#### INTRODUCTION

Pursuant to the final Federal Court judgment for Civil Action No. 1983-73, Natural Resource Defense Council, Inc., et al., versus Secretary of the Interior, James Watt, et al., the Bureau of Land Management (BLM) is required to prepare 144 site-specific environmental impact statements (EIS) concerning the environmental effects of livestock grazing activities on public lands. The court found that BLM was not in compliance with Section 102(2)(C) of the National Environmental Policy Act (NEPA) of 1969 with respect to issuance of grazing authorizations and that a programmatic EIS alone was insufficient. Although no significant issues, impacts, or public interests were identified through formal scoping procedures provided for in the impact analysis process, the Yokayo Grazing EIS is to be prepared by the Ukiah District as a part of the national schedule agreed upon in the final court decision. The EIS is to discuss, in detail appropriate to the level of the site-specific grazing program, various levels of grazing management including all reasonable alternatives.

It is BLM's responsibility to provide for good stewardship of the land and for the best combination of uses over time. The purpose of an environmental impact analysis is to provide a solid basis for planning decisions needed for management, protection, and enhancement of our natural resources. In keeping with the full intent of BLM's primary legislative authority (Taylor Grazing Act of 1934, as amended; Federal Land Policy and Management Act of 1976; and Public Rangelands Improvement Act of 1978) to soundly manage the public lands under the principles of multiple use and sustained yield, the Bureau has prepared the Yokayo Grazing EIS.

#### ISSUE IDENTIFICATION

Scoping of issues for the Yokayo EIS was conducted over a long period of time for a variety of reasons. The following is a summary of public participation:

1. The issue of grazing was reviewed by BLM staff and the public during scoping for the Timber Management EIS for Sustained Yield Unit 13 (August to September 1979).
2. Issue identification was solicited as part of the early phases of the revision of the Clear Lake Resource Area Plan (November 1979 to January 1980).

3. A letter (March 13, 1981) asking specifically for grazing issues was sent to 200 agencies, organizations, and individuals. A total of thirteen responses were received by May 11, 1981.
4. A letter similar to number 3 above (June 19, 1981), and a Federal Register notice (June 23, 1981) asked for comments on grazing issues from a broad geographical area. A total of eight comments were received.
5. The Federal Register published the Notice of Intent for the Clear Lake MFP Amendment (January 14, 1982, revised March 5, 1982).
6. A scoping letter for the Clear Lake MFP revision (February 3, 1982) was sent to over 400 agencies, organizations, and individuals. Less than 30 responses were received; only seven mentioned grazing, and most of these were in relation to wilderness.
7. A Notice of Intent for the Clear Lake MFP Amendment was sent to six boards of supervisors.
8. A letter (November 8, 1982) was sent to all grazing lessees asking for issues and concerns. Two responses were received.

No significant impacts, conflicts, or issues regarding grazing were identified during any of these scoping efforts. One letter from the California Department of Fish and Game (March 25, 1982) states that, "Our field people have not observed or recorded any serious grazing problems within your district." The conclusion is that there are no significant issues related to livestock grazing on public land within the Yokayo grazing area.

The resources and issues discussed in this document are not significant, but are discussed because they may be minimally impacted by a very low-key activity distributed over a large area. Alternatives were developed in response to the District's internal need to analyze the cost-effectiveness of the grazing program and its ability to manage small, scattered tracts of land.

## CHAPTER 2

### DESCRIPTION OF THE PROPOSED ACTION AND ALTERNATIVES

#### INTRODUCTION

This chapter describes the proposed action and alternatives for grazing management in the Yokayo EIS area. The analysis of the environmental effects is documented in Chapter 4.

Consideration was given to the following proposed action and alternatives:

Proposed Action - No Action. Continuation of the present situation, which is strictly low-level management.

Alternative 1 - No grazing. Elimination of all authorized grazing in the EIS area.

Alternative 2 - Active management of manageable leases only. Elimination of nonmanageable leases.

Alternative 3 - Active management of manageable leases. Retention of nonmanageable leases.

Alternative 4 - Active management of all leases.

Alternative 4 (active management of all leases), although considered, was not developed and analyzed because this alternative is inconsistent with the basis of BLM's Final Grazing Management Policy (FGMP) effective March 5, 1982 or the Federal Land Policy and Management Act (FLPMA) of 1976. These policies dictate that BLM's grazing management program must be guided by the Bureau's responsibility for good stewardship of the land and for providing for the best combination of uses over time. Employing identical management strategies on all tracts of land hardly meets our commitment to responsible stewardship or the best combination of uses over time.

Section 102(a)(8) of FLPMA emphasizes our commitment to manage the public lands in a manner that protects the quality of all values (e.g., scientific, scenic, archaeological, and environmental) and yet provides food and habitat for both wildlife and domestic animals. The FGMP elaborates on the importance of concentrating personnel and fiscal efforts in those areas where grazing management is most needed to improve the basic resource or resolve serious resource conflict.

Categorical commitment to active management of all grazing leases is contrary to these policies. Once again, it would be inaccurate to portray an alternative that is beyond our realistic limitations as a District, inconsistent with our mission as an agency or that would require egregious expenditure of Federal monies.

The proposed action and alternatives developed involve analysis of 57,370 acres of public land included in 31 grazing leases (Map 2-1). There are an additional 480,000 acres within the Yokayo EIS area on which livestock grazing is not permitted.

The grazing leases, to a large degree, are composed of small, scattered, and isolated parcels with limited access. This is a grazing management dilemma unique to a few select areas within BLM's administrative jurisdiction. The central grazing issue that must be resolved through analysis of the proposed action and alternatives is, how should BLM manage these land tracts that are considered of limited grazing manageability from our perspective as a land management agency. To facilitate the description of the proposed action and alternatives, the concepts of Manageability and Selective Management will be briefly discussed.

#### MANAGEABILITY

Reference is made in Alternatives 2 and 3 to the land classifications of "manageable" and "nonmanageable." These are determinations made under the broad context of manageability. The concept of manageability takes a hard look at analyzing whether some lands currently under grazing lease are beyond our management capabilities, considering legislative mandate, fiscal constraints, and rational observation.

It is the Bureau's obligation to engage in the most conscientious management practice on each of its grazing lease areas pursuant to the Taylor Grazing Act (TGA) of 1934, as amended, and FLPMA. In addition, BLM is directed by the Final Grazing Management Policy to efficiently manage the rangeland resource in authorizing uses of the public land while employing sound resource management principles.

Grazing leases were reviewed on a case-by-case basis, considering all applicable resource interests (grazing, wildlife, watershed, soils, cultural resources, wilderness, and recreation). The leases were then classified as either manageable or nonmanageable (Appendix 1 and Table 2-1) using the guidelines listed below.



**LEGEND:**

Public land under grazing  
lease, with lease number.

# **Ukiah District Office California**



**SCALE = 1:750,000**

TABLE 2-1 Proposed Allotment Categories and Level  
of Livestock Use in Yokayo EIS Area

Lease #	Selective Management Category	Preference (AUMs)	PUBLIC DOMAIN (Acres)		
			Total	Suitable	Potentially Suitable
5615	M	manageable	78	840	170
5602	I	manageable	157	1,800	680
5514	I	manageable	175	1,400	250
5500	I	manageable	378	7,100	830
5515	I	manageable	730	4,600	925
5513	I	manageable	1,008	5,010	1,525
5625	C	manageable	84	1,670	80
5403	C	manageable	89	440	50
5611	C	manageable	112	3,700	280
5612	C	manageable	120	1,760	180
5617	C	manageable	150	280	30
5508	C	manageable	231	4,530	160
5622	C	manageable	336	4,290	450
5619	C	manageable	368	6,950	1,440
5606	C	non-manageable	7	940	940
5633	C	non-manageable	7	160	160
5601	C	non-manageable	9	1,260	1,260
5503	C	non-manageable	10	240	220
5511	C	non-manageable	11	335	255
5628	C	non-manageable	16	280	260
5505	C	non-manageable	21	80	55
5621	C	non-manageable	25	120	100
5510	C	non-manageable	28	1,130	1,090
5627	C	non-manageable	35	830	750
5506	C	non-manageable	50	480	380
5623	C	non-manageable	60	680	450
5509	C	non-manageable	62	290	130
5620	C	non-manageable	80	585	430
5630	C	non-manageable	84	3,280	3,030
5610	C	non-manageable	92	1,330	1,220
5603	C	non-manageable	113	980	900
					<u>39,280</u>
					<u>10,140</u>
					<u>7,950</u>
					<u>57,370</u>
					<u>4,726</u>
					<u>39,280</u>

- a. Size of tract under lease and location.
- b. Number of suitable acres in tract.
- c. Number of AUMs.
- d. Operator dependency on the public land for livelihood.
- e. Accessibility of the land as a function of BLM's ability to manage the land.
- f. Special features of the land, including particular needs of grazing lessee.
- g. Consideration for the best use of the land.

A tract of land was not identified as nonmanageable if the grazing lessee demonstrated a dependency on the public land for his/her livelihood.

Frequently, the concepts of suitability and manageability have been confused. Suitability is a classification of a given land tract that basically deals with quantitative parameters (e.g., soil depth, percent slope, distance from water, etc.). Manageability, on the other hand, has several criteria used in its determination, one of which is suitability. (More information is available in Appendix 2.)

#### SELECTIVE MANAGEMENT

Selective Management is a land categorization process set forth in the Final Grazing Management Policy designed to make BLM's grazing management program more efficient and cost effective. Grazing allotments have been categorized into groups that share similar:

- a. resource conditions,
- b. management needs, and
- c. resource and economic potential for improvement.

Allotments have been placed in categories of either "Improve" (I), "Maintain" (M), or "Custodial" (C) (Table 2-1) based on an analysis of the existing situation. Criteria used to evaluate grazing allotments can be found in Table 2-2; Appendix 3 contains an explanation of these criteria.

Objectives for Selective Management Categories are:

Maintain (M): To maintain current satisfactory resource conditions.

Improve (I): To improve resource conditions and/or inadequate management strategy where potential for positive economic return exists.

Custodial (C): To manage the land custodially while protecting existing resource values.

TABLE 2-2

ALLOTMENT CATEGORIZATION CHART<sup>1</sup>Selective Management Category

Primary Criteria	I	M	C
Present Management	Unsatisfactory	Satisfactory	Most logical practice
Production Potential	Below optimum potential	Near or at potential	Near or at potential
Resource Conflicts	Conflicts present	Conflicts minimal	Conflicts minimal
Economic Return	Opportunities exist for positive economic return.	Opportunities may exist for positive economic return.	Opportunities for economic return are not likely.
Secondary Criteria	I	M	C
Range Trend	Static-Downward	Static-Upward	Static
Amount of Public Land	Greater than 60%	59% - 29%	Less than 25%

<sup>1</sup>The principal decision for categorization should be made from the primary criteria. The secondary criteria are supplemental input and are not overriding in nature; their function is only to aid in decisionmaking.

Allotments will be managed relative to their selective management category as follows:

CATEGORY I (Improve)

1. Certified actual-use billing or grazing preference (AUM) adjustment may be recommended.
2. Mulch management will be the preferred grazing management strategy (Table 2-3 and Appendix 4).
3. Allotment management plans (AMPs) will be recommended.
4. Annual monitoring of allotment utilization will be mandatory.

CATEGORY M (Maintain)

1. Certified actual-use billing or grazing preference (AUM) adjustment will not be recommended initially.
2. Existing grazing management strategy will continue as currently authorized, but mulch management may be recommended.
3. AMPs will be recommended if nonexistent.
4. Annual monitoring of allotment utilization will be recommended if a resource problem becomes evident.

CATEGORY C (Custodial)

1. Certified actual-use billing will not be recommended, and grazing preference will not be adjusted initially.
2. Existing grazing management will continue as currently authorized.
3. AMPs will not be recommended.
4. Allotment utilization monitoring will be employed on a limited basis, if at all.
5. Exclusion of livestock use may be recommended.

ALTERNATIVES INCLUDING THE PROPOSED ACTION

PROPOSED ACTION - CONTINUATION OF PRESENT SITUATION (NO ACTION)

The proposed action is perpetuation of the existing management system with forage allocations as shown in Table 2-1. In effect, this would mean continuing to issue 10-year grazing leases and making but a few small scale range improvements, such as construction of exclosures or small sections

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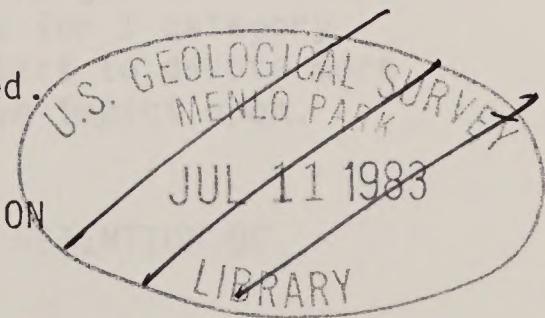


TABLE 2-3

MULCH MANAGEMENT GUIDELINES<sup>1</sup>

Annual Precipitation	<u>Percent Slope</u>		
	0-25	26-40	40+
18-30"	400 lbs./acre	500 lbs./acre	600 lbs./acre
30-50"	500 lbs./acre	600 lbs./acre	750 lbs./acre
50+"	500 lbs./acre	750 lbs./acre	1,000 lbs./acre

<sup>1</sup>The Mulch Management Guidelines are exactly that, guidelines. Each allotment has its own climatological, ecological, and edaphic characteristics. Productivity, which the residual mulch concept is inevitably based upon, is dependent not only on precipitation, soil texture, and soil depth, but soil chemistry can be a dominant edaphic factor as well within the Mediterranean annual precipitation regimes (Rossiter 1966). Therefore, the guidelines established above are useful for initial efforts, but will, in time, be adjusted to provide the balance between optimal productivity and resource protection.

of fence on an infrequent basis. Improvements would be made only on I category allotments. All selective management categories would be administered with a low-level management intensity. I category allotments would, however, receive any site-specific field examinations. Further AMP development would be foregone.

**ALTERNATIVE 1 - NO GRAZING. ELIMINATION OF ALL AUTHORIZED GRAZING IN THE EIS AREA.**

Authorized grazing would be eliminated entirely from the EIS area regardless of selective management category or manageability status. All grazing leases would be cancelled or relinquished by 1986. In addition, no grazing leases would be issued in the future. The forage resource, therefore, would be allocated to multiple uses other than grazing. No range improvements would be implemented and no residual mulch management data would be collected.

Grazing trespass would undoubtedly occur to an unquantifiable degree because the public domain boundary would not be fenced; fencing of the scattered parcels of public domain would be unrealistic and extremely expensive.

**ALTERNATIVE 2 - ACTIVE MANAGEMENT OF MANAGEABLE LEASES ONLY. ELIMINATION OF NONMANAGEABLE LEASES.**

Active management of the grazing leases classified as manageable would be as follows: I category allotments would have implementation of certified actual-use billing, residual mulch management, and AMPs. Monitoring plans and schedules would be included in the AMPs. M category allotments would have AMPs similar to I category allotments but would not have certified actual-use billing as a high priority. All C category allotments would have a periodic utilization monitoring program only. Seventeen grazing leases will be eliminated due to lack of manageability.

In the short term, there would be a loss of approximately 700 Animal Unit Months (AUMs) from the EIS area due to elimination of the 17 nonmanageable leases. Over time, there may be an increase or a further decrease in AUMs, depending upon conclusions drawn from site-specific monitoring studies. This alternative would provide for increased flexibility to the rangeland user by reduction of annual grazing fee outlay in poor forage years for I category allotments. Furthermore, it would allow a limited range staff to devote more time and energy to lands that the Bureau can have a positive impact upon.

**ALTERNATIVE 3 - ACTIVE MANAGEMENT OF MANAGEABLE LEASES AND RETENTION OF NONMANAGEABLE LEASES.**

This alternative is similar to Alternative 2 with the exception of retention of the 17 nonmanageable leases. These 17 leases would be managed as they are currently, which is of low-level intensity. The management proposed under this alternative would not alter the average number of AUMs allocated per year.

## ACTIONS COMMON TO ALL ALTERNATIVES

1. To augment existing cultural resource studies and to ensure that future activities related to the field implementation of rangeland management facilities or activities do not effect adverse changes to cultural resource values, BLM will conduct intensive (Class III) field inventories of areas affected by each proposal. Avoidance of cultural resource values will be preferred mitigation whenever possible. However, where that is not possible BLM will meet agency responsibilities under Section 106 of the National Historic Preservation Act of 1966 (as amended) as codified in 36 CFR 800.
2. Cancelled allotments and other BLM land in grazing areas will be inspected for trespass grazing primarily during the course of ongoing field work. Administrative measures will be taken to remedy unauthorized grazing when encountered.
3. Pursuant to Section 208 of the Clean Water Act, the Bureau of Land Management developed best management practices (BMPs) for grazing (USDI, BLM 1979) on public lands. These were approved in 1979 by the Environmental Protection Agency. BMPs are general guidelines, which the BLM will implement under all of the alternatives discussed in this document except the no grazing alternative.

## PREFERRED ALTERNATIVE

The preferred alternative is active management of manageable leases with elimination of nonmanageable leases. This alternative is cost-effective; it places money and effort where the best economic and environmental returns will be made. It provides for an appropriate level of use and protection of land that is suitable for grazing use and eliminates grazing on land that is not manageable. Incidental trespass may be a recurring problem, but periodic monitoring should keep this to a satisfactory level.

## CHAPTER 3

### AFFECTED ENVIRONMENT

#### INTRODUCTION

Chapter 3 discusses the components of the environment (including the social environment) that would be affected by the proposal and alternatives. This is a general description of the existing environment to provide background for understanding the effects of the proposal and alternatives discussed in Chapter 4. Emphasis is given to those components of the environment that would be most affected.

#### OVERVIEW

The climate of the area is mediterranean with warm, dry summers and mild, wet winters. Temperatures range from 10° to 110°F at inland points and from 20° to 90°F at coastal locations. The Pacific Ocean modifies coastal areas with fog and cool breezes.

Rainfall totals range from 25 inches in southern portions of the unit to 120 inches at northern coastal points. Most of the precipitation falls as rain during the winter months. Snow occasionally falls at all elevations and is heaviest at the higher elevations of the more northerly portions of the area.

The entire area lies within the North Coast air basin. Air quality is well within Federal and State standards. The prevailing winds are continually active off the Pacific Ocean from the northwest. Microclimatic temperature inversions do occur, however, and result in short periods of air stagnation.

#### VEGETATION

The public lands under grazing lease within the Yokayo EIS area contain five principal vegetation types (Table 3-1). These types are cismontane introduced grassland, chaparral, oak woodlands, mixed evergreen forests, and coast range mixed conifer forests. In a generic sense, it can be said that chaparral dominates the EIS area, constituting approximately 67% of the land within grazing leases. The grasslands found are annual in nature with only an occasional perennial component.

Cismontane introduced grassland and oak woodlands are the communities of primary interest from a grazing management perspective, comprising 9% and 15% of the leased area, respectively. They have been utilized by the live-stock industry for more than a century (Griffin 1977). The ground cover

TABLE 3-1

Vegetation Types<sup>1</sup> Under Lease For  
Grazing in the Yokayo EIS Area

Vegetation Type	Vegetation Subtype	Public Land Acres	Percent of Total Acres	Characteristic Species
Valley and Foothill Grasslands	Cismontane Introduced Grassland	5,380	9%	<u>Avena fatua</u> , <u>A. barbata</u> , <u>Bromus mollis</u> , <u>B. diandrus</u> , <u>Festuca megalura</u> , <u>Festuca spp.</u> , <u>Erodium spp.</u>
Chaparral	California Mixed Chaparral	11,530	20%	<u>Adenostoma fasciculatum</u> , <u>Ceanothus spp.</u> , <u>Cercocarpus betuloides</u> , <u>Pickeringia montana</u>
	Chamise Chaparral	18,260	32%	<u>Adenostoma fasciculatum</u> , <u>Arctostaphylos spp.</u> , <u>Ceanothus spp.</u>
	Lower Montane Chaparral	4,060	7%	<u>Arctostaphylos patula</u> , <u>Ceanothus cuneatus</u> , <u>Quercus spp.</u>
	Serpentine Chaparral	4,320	8%	<u>Adenostoma fasciculatum</u> , <u>Ceanothus jepsonii</u> , <u>Quercus durata</u>
Oak Woodlands	Northern Oak Woodland	5,720	10%	<u>Quercus kelloggii</u> , <u>Q. garryana</u> , <u>Q. chrysolepis</u> , <u>Aesculus californica</u>
	Blue Oak Woodland	2,630	5%	<u>Quercus douglasii</u> , <u>Q. lobata</u> , <u>Q. wislizenii</u> , <u>Pinus sabiniana</u>
3-2	Mixed Evergreen Forests	2,420	4%	<u>Arbutus menziesii</u> , <u>Lithocarpus densiflorus</u> , <u>Pseudotsuga menziesii</u>
	Lower Montane Coniferous Forests	3,050	5%	<u>Pseudotsuga menziesii</u> , <u>Pinus ponderosa</u> , <u>Calocedrus decurrens</u> , <u>Lithocarpus densiflorus</u> , <u>Arbutus menziesii</u>
		57,370		

<sup>1</sup> Vegetation types and subtypes derived from Cheetham, N.W. and J.R. Haller. 1975. An Annotated List of California Habitat Types. (unpublished manuscript)

of the oak woodlands is very similar, if not identical, to the cismontane introduced grassland. Bromus, Festuca, Avena and Erodium are the annual genera that contribute most significantly to the forage consumed by livestock.

An annual allocation of 4,726 animal unit months (AUMs) is presently being leased for livestock consumption with the season of use in the spring and occasionally in the fall. Mean annual forage production in the areas under lease is approximately 10,000 AUMs, but yearly fluctuations can be as much as 350% depending upon precipitation (Duncan and Reppert 1960). Carrying capacities in this wet rainfall zone, where mean annual precipitation ranges from 25-120 inches, averages from 0.5 to 2.0 acres per AUM. Higher carrying capacities can be realized with fertilization.

The public lands under grazing lease have been classified into three (3) categories for grazing suitability (Table 3-2). Of the 57,370 acres in the EIS area, only 14% is actually suitable for grazing. Criteria for suitability is given in Appendix 5. Seventeen of the 31 grazing leases are considered non-manageable (Table 3-3 and Chapter 2).

TABLE 3-2. Suitability of Areas Under Grazing Lease

<u>Category</u>	<u>Acres</u>	<u>% of Total</u>
Suitable	7,950	14%
Potentially Suitable	10,140	18%
Unsuitable	39,280	68%
TOTAL	57,370	100%

TABLE 3-3. Manageability of Areas Under Grazing Lease

<u>Category</u>	<u>Acres</u>	<u>% of Total</u>	<u>Leases</u>	<u>% of Total</u>
Manageable	44,370	77%	14	45%
Nonmanageable	13,000	23%	17	55%
TOTAL	57,370	100%	31	100%

One plant species found within the EIS area, Arabis mcdonaldiana, is Federally listed as endangered under the authority of the Endangered Species Act of 1973, as amended (Federal Register, December 15, 1980, Vol. 45, No. 242). This species does not occur on public land presently under grazing lease, however. Currently, 89 other plant species are under review by the U.S. Fish and Wildlife Service for possible listing as threatened or endangered within the EIS area. Information on these "candidate" species is available from the Ukiah District Office.

## SOILS

The soils in the EIS area are derived from sandstone, shale, serpentine, lacustrine deposits, graywacke, schist, basalt, and alluvium from mixed rock sources. These soils can be combined into two broad land types: (1) alluvial fan and terrace (occurs on about 10 percent of the EIS area) and (2) upland (90 percent). (See Table 3-4.)

The alluvial fan and terrace soils are formed from alluvium from mixed rock sources and have an effective root depth of 60 inches or more. The available water holding capacity is 1.5 to 9 inches, permeability is very slow to slow, and the erosion hazard is slight to moderate for the areas currently under grazing lease.

The upland soils are derived from sandstone, shale, serpentine, lacustrine deposits, graywacke, schist, and basalt. These soils have an effective root depth of 7 to 60 inches and the available water holding capacity is 0.5 to 10.0 inches. Permeability is slow to moderate and the hazard of sheet and rill erosion is slight to very high. Rock outcrops and very shallow and/or very stony soils are low in productivity and support sparser stands of grass than the deeper soils.

Sediment is presently polluting streams through hillside creep and landslides. More detailed information on soil associations and soil series is available at the BLM office in Ukiah and at the Soil Conservation Service offices in Lakeport, Ukiah, Santa Rosa, Woodland, and Willows. Watersheds in the EIS area are inherently unstable, and erosion gullies are increasing in numbers.

## WILDLIFE

### DATA BASE

During 1980-1981, 18 grazing allotments and 2 trespass grazing areas were visited to inventory wildlife and assess impacts resulting from grazing. Ten other allotments were more intensively inventoried and included small mammal trapping, bird counts, and searches for reptiles and amphibians. These inventories revealed the presence and relative abundance of wildlife in the area. Additional data from intensive studies conducted throughout the area appear in documents by USDI, BLM (1977a and 1977b), California Department of Fish and Game (1978), D'Appolonia (1982), Longhurst (1975 and 1978), and Mann (1974). The available data confirm the presence of fauna typical of chaparral, cismontane introduced grassland, oak woodlands, mixed evergreen forests, coast range mixed conifer forests, and riparian areas within these vegetation types. These data are available in the Ukiah District BLM office.

### GENERAL

Problem areas include: (1) grazing in wet areas, including seeps, springs, and perennial creek bottoms, and (2) allocation of forage to wildlife. Although

TABLE 3-4

## Soil Erosion Susceptibility and Some Physical Characteristics of Soils by Allotment

Allotment Number	Soils With Grazing Use	Erosion Susceptibility 1./	Percent Slope	Bedrock or Underlying Material	Permeability	Effective Root Depth 2./	Available Water Holding Capacity 3./
5615	Bally Phipps	Moderate - high Moderate - high	30-50 30-50	Alluvium from mixed sources Alluvium from mixed sources	Slow Slow	60+ 60+	4.5-6.0 7-9
5602	Bally Phipps	Moderate - high Moderate - high	30-50 30-50	Alluvium from mixed sources Alluvium from mixed sources	Slow Slow	60+ 60+	4.5-6.0 7-9
5514	Maymen Hopland	High High	50-75 50-75	Sandstone, Graywacke or shale Sandstone, graywacke, or shale	Moderately Slow Moderately Slow	10-20 20-40	1.5-2.5 3-5
	Russian	Slight	0-2	Sedimentary rocks	Moderately Slow	60+	8-10
5515	Bluenose Sanhedrin	Moderate Moderate	8-30 15-30	Sandstone, schist, and/or shale Sandstone and siltstone	Moderately Slow Moderately Slow	40-60 40-60	4.5-6.0 4-7
	Kekawaka	Moderate	15-30	Sandstone and siltstone	Moderately Slow	60+	8.5-10.0
5513	Sanhedrin Kekawaka Speaker	Slight - moderate Slight - moderate Moderate	2-30 2-30 2-50	Sandstone and siltstone Sandstone and siltstone Sandstone	Moderately Slow Moderately Slow Very Slow	40-60 60+ 20-40	4.5-6.0 8.5-10.0 3.5-6.5
	Yorkville Squawrock Witherell	Moderate	15-30 15-30	Sandstone and graywacke Sandstone	Moderately Rapid	20-40 10-20	1.5-4.5 1-2
	Bluenose Tyson	Moderate	8-50	Sandstone, schist, and/or shale	Moderately Slow	60+	4-7
	Henneke	Moderate	5-30	Serpentine	Moderately Slow	20-40 10-20	1.5-5.0 1-2
5611	Bressa Dibble	Moderate - high Moderate	30-50 5-75	Sandstone	Moderately Slow	20-40 20-40	3.0-6.5 5-7
5612	Bressa Dibble	High Moderate	50-75 50-75	Sandstone	Moderately Slow	20-40 20-40	3.0-6.5 5-7

TABLE 3-4 (Continued)

## Soil Erosion Susceptibility and Some Physical Characteristics of Soils by Allotment

Allotment Number	Soils With Grazing Use	Erosion Susceptibility 1./ Slope	Percent Underlying Material	Bedrock or Underlying Material	Permeability	Effective Root Depth 2./	Available Water Holding Capacity 3./
5617	Bressa	High	50-75	Sandstone	Moderately Slow	20-40	3.0-6.5
	Dibble	Moderate	50-75	Sandstone and shale	Slow	20-40	5-7
5622	Guenoc	Moderate - high	2-75	Basalt rock	Moderately Slow	7-14	1-2
	Stoneyford	Moderate - high	2-75	Basalt rock	Moderately Slow	11-36	2-3
	Sleeper	Moderate - high	15-30	Sandstone and shale	Moderately Slow	40-60	2-6
	Bressa	Moderate - high	30-50	Sandstone	Moderately Slow	20-40	3.0-6.5
	Millsholm	Moderate - high	30-50	Sandstone	Moderate Slow	10-20	1.5-2.5
	Alo	Moderate - high	15-50	Lacustrine deposits	Very Slow	20-40	3-7
	Maymen	Moderate - high	30-50	Sandstone, graywacke, or shale	Moderate	10-20	1.5-2.5
	Dibble	Moderate - high	30-50	Sandstone and shale	Slow	20-40	5-7
	Millsholm	Moderate - high	15-75	Sandstone	Moderate	10-20	1.5-2.5
5606	Unsuitable for Grazing Use.						
5633	Unsuitable for Grazing Use.						
5601	Unsuitable for Grazing Use.						
5511	Maymen	Moderate - high	30-75	Sandstone, graywacke, or shale	Moderate	10-20	1.5-2.5
	Millsholm	Moderate - high	30-75	Sandstone	Moderate Slow	10-20	1.5-2.5
	Phipps	Moderate - high	30-70	Alluvium from mixed sources	60+	7-9	
	Millsholm	Moderate - high	30-50	Sandstone	Moderate Slow	10-20	1.5-2.5
	Skyhigh	Moderate - high	15-50	Sandstone and graywacke	Moderate	20-40	3.0-6.5
	Sleeper	Moderate	15-30	Sandstone and shale	Moderate	40-60	2-6
5505	Maymen	Moderate - high	30-75	Sandstone, graywacke, or shale	Moderate	10-20	1.5-2.5
	Millsholm	Moderate - high	30-50	Sandstone	Moderate	10-20	1.5-2.5
	Bressa	Moderate - high	30-50	Sandstone	Moderate	20-40	3.0-6.5
5621	Skyhigh	Moderate	15-30	Sandstone and graywacke	Slow	20-40	3.0-6.5
	Sleeper	Moderate	15-30	Sandstone and shale	Moderate	40-60	2-6
	Millsholm	Moderate - high	30-50	Sandstone	Moderate	10-20	1.5-2.5
5627	Montara	Moderate - high	5-50	Serpentine	Moderate Slow	10-15	2.0-2.5

TABLE 3-4 (Continued)

## Soil Erosion Susceptibility and Some Physical Characteristics of Soils by Allotment

Allotment Number	Soils With Grazing Use	Erosion Susceptibility 1./	Percent Slope	Underlying Material	Bedrock or Permeability	Root Depth 2./	Effective Water Holding Capacity 3./
5623	Stoneyford	Moderate	30-50	Basalt rock	Moderately Slow	11-36	2-3
	Guenoc	Moderate - high	2-75	Basalt rock	Moderately Slow	7-14	1-2
	Millsholm	Moderate - high	30-50	Sandstone	Moderate	10-20	1.5-2.5
	Bressa	Moderate - high	30-50	Sandstone	Moderately Slow	20-40	3.0-6.5
	Millsholm	Moderate - high	30-75	Sandstone	Moderate	10-20	1.5-2.5
5630	Altamont Rumsey	Moderate - high	5-75	Sandstone and shale	Moderate	10-20	0.5-1.5
		Moderate - high	5-75	Sandstone	Moderate	8-10	1-7
5610	Maymen	Moderate - high	30-50	Sandstone, graywacke, or shale	Moderate	10-20	1.5-2.5
	Etsel	High	30-50	Sandstone and shale	Moderate	4-10	0.5-1.5
	Speaker	Moderate - high	30-50	Sandstone	Moderately Slow	20-40	3.5-6.5
	Altamont Rumsey	Moderate - high	30-50	Sandstone and shale	Moderate	10-20	0.5-1.5
		Moderate - high	30-50	Sandstone	Moderate	8-10	1-7
	Laughlin	High	50-75	Sandstone and shale	Moderate	20-30	3.0-4.5
	Yorkville	Moderate	15-30	Graywacke, schist, and shale	Very Slow	60+	8.5-9.5
	Sobrante	Moderate	2-20	Sandstone	Moderate	18-36	3-6
	Maymen	Moderate - high	30-50	Sandstone, graywacke, or shale	Moderate	10-20	1.5-2.5
	Hugo	Moderate - high	9-75	Sandstone and shale	Moderate	30-60	4-8
5509	Maymen	Moderate - high	30-50	Sandstone, graywacke, or shale	Moderate	10-20	1.5-2.5
5510	Huse	Moderate	40-70	Ultra-basic igneous	Rapid	10-20	.05-1.5

1./ Soil Erosion Susceptibility is a rating based on expected losses of surface soil when all vegetative cover including litter is removed. The rating criteria are those used by the Soil Conservation Service, based upon soil slope, and climate. "Slight" means that little loss of soil material is expected, minor sheet or rill erosion may occur. "Moderate" means that some loss of surface soil material can be expected; rills, small gullies, and sheet erosion may occur. "High" means that considerable loss of surface soil material can be expected; rills, numerous small gullies, and sheet erosion can occur.

2./ Effective Root Depth is measured in inches.

3./ Available Water Holding Capacity is the ability of a soil to store water for plant growth and is measured in inches of water in the soil profile.

the wet areas are limited on BLM grazing lands, they are important for a variety of wildlife. The problem of forage allocation is particularly noticeable in northeastern Mendocino County where the CDFG has identified winter deer range (CDFG, ASBI Map 23). The winter deer range occurs primarily below 3500 feet elevation along major drainages of the area, and much of the range is in private ownership. Approximately 3,000 acres of the winter deer range occur on public domain under BLM grazing lease (GL 5500).

At the time allotment inspections and inventories were conducted, the upland portions of allotments were generally found to be in satisfactory or better condition for wildlife. Small BLM grazing areas are often physically isolated from private grazing land and other BLM land by dense stands of brush and reflect little to no use by livestock. Grazing by livestock along with deer use contributes to poor regeneration of the oak species, particularly in oak woodland vegetation.

#### ENDANGERED AND THREATENED SPECIES

Bald eagle and peregrine falcon occur in low numbers over much of the EIS area, which includes the BLM grazing allotments. The bald eagle is present during winter with most use concentrated in the vicinity of the larger streams, rivers, and reservoirs.

The peregrine falcon also occurs in a small portion of the area containing the BLM grazing leases, but these leases do not contain critical peregrine habitat.

#### CULTURAL RESOURCES

Because of the size of the Yokayo Grazing EIS study area (57,370 acres), a comprehensive study to identify and evaluate all prehistoric and historic properties potentially eligible for inclusion on the National Register of Historic Places (NRHP) was impossible due to funding and manpower constraints. However, BLM has completed two Class I inventories (overviews) which cover the study area (Tamez 1978 and Orlins, et al., 1982). In addition to the overviews, BLM compiled data from all known inventories conducted for or by BLM and other agencies within the study area. These project-oriented or regional studies (e.g., Roberts 1978 and French 1978) cover 10% of the affected suitable grazing acreage and 7% of the total study area (Table 3-5). BLM, in consultation with representatives of the California State Historic Preservation Officer, determined that the extant data were sufficient in typifying the expected spectrum of cultural resource values and in assessing the potential impacts in relation to the nature and intensity of the proposed action. As such, the cumulative information satisfies the requisite Class II (sample) inventory stipulation in the Rangeland Programmatic Memorandum of Agreement between BLM and the President's Advisory Council on Historic Preservation dated January 14, 1982.

These studies have resulted in the identification of 33 sites of prehistoric value, 2 sites of historic value, and one site of contemporary sociocultural value. Of the above, one historic and several prehistoric sites appear to be eligible for inclusion on the NRHP. Information pertaining to the above studies

TABLE 3-5  
CULTURAL RESOURCES SUMMARY BY LEASE

LEASE NUMBER	MANAGEMENT CATEGORY (a)	SUITABLE ACRES	INVENTORIED ACRES---%	SITES(b) P,H,S	UNSUITABLE ACRES	INVENTORIED ACRES---%	SITES(b) P,H,S	TOTAL ACRES	INVENTORIED ACRES-----% P,H,S	KNOWN SITES(b) P,H,S	MONTHS INVENTORIED ACRES----% (AUMs)	ANIMAL UNIT	ACRES WITH KNOWN OR PREDICTED CRM VALUES
5514	I	250	50-20		1,150	110-10		1,400	160-11				175
5615,5602	M,I	850			1,790		0,0,1	2,640		0,0,1		235	850
5500	I	830	10-1		6,270	60-1		7,100	70-1			378	1,000
5513,5515	I	2,025	400-20	3,0,0	7,585	1,240-16	4,0,0	9,610	1,640-7	7,0,0	1,738		950
Subtotal	M,I	3,955	460-12	3,0,0	16,795	1,410-8	4,0,1	20,750	1,870-9	7,0,1	2,526		2,800
5625	C+	80			1,590			1,670				84	1,400
5403	C+	50	20-40		390	140-31		440	160-36			89	
5508	C+	450			4,080	80-2		4,530	80-2			231	450
5622	C+	570	65-11	2,0,0	3,720	335-8	3,0,0	4,290	400-9	5,0,0	336		700
5619	C+	490	20-4		6,450	190-3		6,950	210-4			368	1,250
5611,5612	C+	620			5,120			5,740				382	650
5617													
Subtotal	C+	2,260	105-5	2,0,0	21,350	745-3	3,0,0	23,620	850-4	5,0,0	1,490		4,450
TOTAL	C+,M,I	6,215	565-9	5,0,0	38,145	2,155-6	7,0,1	44,370	2,720-6	12,0,1	4,016		7,250

TABLE 3-5 (Continued)  
CULTURAL RESOURCES SUMMARY BY LEASE

LEASE NUMBER	MANAGEMENT CATEGORY(a)	ACRES	SUITABLE ACRES	INVENTORIED ACRES-----%	KNOWN SITES(b) P,H,S	UNSUITABLE ACRES	INVENTORIED ACRES-----%	KNOWN SITES(b) P,H,S	TOTAL ACRES	INVENTORIED ACRES-----%	KNOWN SITES(b) P,H,S	MONTHS (AUMS)	PREDICTED CRM VALUES	ANIMAL UNIT	ACRES WITH KNOWN OR PREDICTED CRM VALUES
5606	C-				940				940					7	50
5633	C-				160				160					7	80
5601	C-				1,260	160-13	2,0,0	1,260	160-13	2,0,0	1,260		9	850	
5511	C-	30			305	20-7		335	20-6				11	120	
5628	C-	20			260			280					16	280	
5505	C-	25			55			80					21		
5621	C-	20	10-50		100			120	10-8				25		
5627	C-	80			750			830					35	200	
5510,5503	C-	60			1,310			1,370					38	200	
5506	C-	100			380			480					50	80	
5623	C-	100			580	80-14	0,1,0	680	80-12	0,1,0	680		60	100	
5509	C-	160	160-100	0,1,0	130	130-100	3,0,0	290	290-100	3,1,0	62		50		
5620	C-	150			430			580					80	80	
5630	C-	250	20-8		3,030	340-11	8,0,0	3,280	360-11	8,0,0	3,280		84	2,400	
5610	C-	110			1,130	180-16	5,0,0	1,240	180-15	5,0,0	1,240		92	500	
5603	C-	80			900			980					113	120	
Subtotal	C-	1,185	190-16	0,1,0	11,720	910-8	18,1,0	12,905	1,100-9	18,2,0	12,905		710	5,110	
GRAND TOTAL	C-, C+, M, I	7,400	755-10	5,1,0	49,865	3,065-6	25,1,1	57,275	3,820-7	30,2,1	4,726			12,360	

a. Selective Management Categories are: M (Maintenance), I (Improvement), and C+ or C- (Custodial with positive or negative manageability).

b. Known Sites are grouped within: P (Prehistoric), H (Historic), and S (Sociocultural).

or identified cultural resource values within the purview of this document is available at BLM's discretion from the Ukiah District Office.

Although the leases within the study area are distributed diffusely over a broad region and vary specifically from north (Big Butte) to south (Walker Ridge), the affected area is generally rugged hinterlands usually covered with chaparral or other dense vegetation. Not surprisingly, these areas generally exhibit limited human use in the prehistoric and early historic eras. The following is a synopsis of the known prehistoric, historic, and sociocultural values.

#### PREHISTORIC VALUES

The study area falls within an area utilized ethnographically by 12 distinct linguistic groups, including members of the Athabascan, Yukian, Hokan/Siouan, and Penutian Linguistic Families. Identified sites include two occupation sites (both on the boundary of the affected public lands) and, more usually, limited activity sites consisting of rock quarries, lithic scatters, and temporary occupation sites. These sites occur predictably on ridgetops, stream terraces, or localized flats on slopes of less than 40 percent in relative proximity to a reliable source of water. Acreage meeting any of these criteria is limited within the study area (approximately 20 percent).

#### HISTORIC VALUES

The recorded sites of historic value include a portion of the Buckeye quicksilver mine and the short-lived remains of John F. Stribley's depression era cabin. Neither site appears on the surface to have materials of over 50 years in age. However, the operation of the Buckeye Mine is known to have started at least by World War I. Other expected historic site types include trails, range-related facilities, and perhaps cabins used by distillers of illegal alcohol dating from the prohibition era. It is generally expected that few sites of significant historic value would be encountered within the study area.

#### SOCIOCULTURAL VALUES

An extremely significant magnesite quarry is found within the study area. This quarry was the source of some wealth for the Southeastern Pomo people. This material was formed into beads and cylinders and was traded extensively. The quarry is perhaps the most significant of its type known.

BLM will act in accordance with the Memorandum of Understanding between the BLM, the California State Historic Preservation Officer, and the California Native American Heritage Commission regarding a policy of Native American concerns and cultural resource management: the "local Native American Community shall be contacted, advised and comments solicited." Therefore, relevant, identifiable Native American groups, as well as the Native American Heritage Commission, will be consulted as part of the Draft EIS review. Such consultation will be directed at identifying areas of concern within traditional heritage values or for particular aspects of a community's heritage or cultural legacy.

## SOCIOECONOMICS

The 30 grazing lessees currently operating in the EIS area run operations that can be categorized as follows:

- I Hobby ranchers who visit their operation on weekends or are casually engaged in the livestock business.
- II Operators who are engaged in the livestock business as a vocation and substantially utilize public land.
- III Operators who lease public land to avoid nonwillful trespass.
- IV Individuals who supplement their income by raising livestock.

Many of the lessees (45%) have operations that can be classified as Category I (Table 3-6).

TABLE 3-6. Socioeconomic Categorization of Grazing Lessees

	<u>Category I</u>	<u>Category II</u>	<u>Category III</u>	<u>Category IV</u>
Leases	5511			
	5506	5602	5606	5603
	5505	5619*	5601	5615
	5510	5617*	5630	5622
	5503	5625	5612	
	5509	5515		
	5610	5514		
	5628	5513		
	5621	5500		
	5633	5508		
	5623	5403		
	5627			
	5620			
	5611			
TOTAL (%)	14 (45%)	10 (32%)	4 (13%)	3 (10%)

\* Grazing leases 5617 and 5619 are leased to the same operator.

## RECREATION

Most of the public lands in the Yokayo EIS area are remote, rugged, heavily vegetated, and without public access. The few areas that are available are used for hunting and other low-intensity dispersed uses. A few areas have moderate levels of motorcycling and other ORV recreation.

Demand for recreation use on these lands is not high, but if accessible, the blocks of land closer to the San Francisco Bay Area and Sacramento Valley populations would experience higher use.

Conflicts between recreation and grazing occur on the few areas used for ORV recreation. The problems are generally of the nature of fence cutting, gate openings, and shooting vandalism. There is, however, some destruction of grassland resource by the vehicles. Where there is any existing or potential backcountry hiking and camping associated with the recreation use, there can be a conflict. Livestock tend to utilize the most desirable camping areas and also trample and foul natural water sources.

## WILDERNESS

A total of eight grazing leases are contained within four wilderness study areas (WSAs). These areas have been or will be studied to determine their suitability for wilderness designation. After study, recommendations will be forwarded to Congress for their final decision on inclusion in the National Wilderness Preservation System.

Until such decision is made, the WSAs must be managed to ensure that no actions are taken that impair their wilderness suitability. Areas designated as wilderness will be managed under guidelines that protect wilderness values, and those not designated will return to multiple-use management as described in the existing land-use plans.



## CHAPTER 4

### ENVIRONMENTAL CONSEQUENCES

Chapter 4 describes the environmental, social, and economic consequences of the proposed action and alternatives. The discussions are included to illustrate that none of the impacts of the grazing program, neither long-term nor short-term, are significant. There is no irreversible or irretrievable commitment of resources.

#### PROPOSED ACTION (CONTINUATION OF PRESENT SITUATION)

##### VEGETATION

General changes would not occur in species composition, forage production, or residual ground cover (mulch) under the proposed action. Minor adverse impacts on residual ground cover and forage production may occur site-specifically in riparian areas.

The most important parameter controlling annual forage production, and thus residual ground cover, in our Mediterranean climatological regime is amount and temporal distribution of precipitation (Murphy 1970). Species composition, as well, is more dependent upon the environmental variable of rainfall than any other factor, including grazing (Heady 1977 and Pitt and Heady 1979).

The one plant species, Arabis mcdonaldiana, found within the EIS area that is Federally listed as endangered would not be impacted by the proposed action or any alternative since it does not occur on lands presently under grazing lease. Site-specific information concerning the impact of existing livestock grazing management is incomplete for the 89 "candidate" species. Adverse impacts due to any form of range improvement would be avoided by conducting intensive plant inventories of the project area and appropriate mitigation.

##### SOILS

Road construction, landslides, logging practices, and other developments are the major contributors of sediment in the watersheds within the EIS area. During drought years, vegetation production is less than normal and thus the possibility of overutilization by domestic livestock and wildlife increases. This can result in an unquantifiable increase in soil erosion and sedimentation. Soils that are shallow, low in available water holding capacity, and, therefore, low in productivity would have the greatest potential for increased soil erosion. The probability of a drought year in the EIS area is about one in 20 years (based on percentile rank for average rainfall from 1877-1969). A continuation of the existing program and management system should not adversely impact the soils resource during normal rainfall years.

## WILDLIFE

Continuation of the existing situation would essentially leave management of the grazing allotments in the hands of the lessees. Management would vary depending primarily upon the capability and needs of the individual lessees. Only 6 of the 31 allotments (M and I categories) would receive the mulch management system designed to leave sufficient ground cover and forage for maintenance of wildlife habitat (Table 2-3). Grazing could become excessive, particularly during drought years such as 1975-76, 76-77. Specific allotments where undesirable grazing would most likely occur include leases where suitable grazing acreage and allocated AUMs closely approach each other. Examples of such allotments include 5513, 5623, 5403, 5617, 5628, 5505, 5621, 5610, and 5603 (Table 2-1), a total of 2,090 acres.

The heaviest grazing occurs in and adjacent to wet areas, including springs, seeps, wet meadows, and the small portions of perennial streams under BLM jurisdiction. Examples of such areas include Elk, Wilson, Antone, and Salt creeks and springs in allotments 5602 and 5403. Although most of the grazing is only seasonal, it occurs during the major growth and reproductive period of perennial plants found within these riparian areas every year. This results in the curtailment of full development of perennial vegetation in and adjacent to heavily used wet areas. While small in size, well developed riparian vegetation is the most important wildlife habitat per unit area in terms of numbers and variety of species, particularly for birds. For example, D'Appolonia (1982) conducted daytime inventories on 31 acres of riparian woodland habitat in Davis Creek. Seventy-one species of wildlife, including 12 mammals, 50 birds, and 9 herptiles, were observed and others were expected to be present. Total bird abundance was calculated to be 375 birds per 100 acres of habitat. Current condition of the habitat was not discussed, but it was concluded that the riparian woodland was the most valuable habitat to the regional fauna. Game species that are impacted include the black-tailed mule deer and California quail.

Under the proposed action, no range improvements that could benefit wildlife, such as fencing and water development, would occur. Monitoring of range use and trend, which could facilitate changes in grazing and improvement of some of the smaller but more important wildlife habitat areas, would be very limited. With the lack of BLM presence, trespass grazing would likely continue in some areas (e.g., T. 17 N., R. 6 W. and T. 17 N., R. 5 W.) or fluctuate with livestock markets.

Due to the scattered locations of allotments, small amount of suitable grazing area, type of vegetation involved, and small number of livestock present, BLM-authorized grazing would only impact wildlife in the overall area to a minor degree. However, on a more site-specific basis, unacceptable grazing is occurring in small but important habitats, particularly wet areas. Adding a measure of importance to these areas is the fact that the larger intervening areas of private grazing lands are managed primarily for domestic livestock.

Heavy grazing by both wild and domestic animals in riparian areas on a continuous basis can result in a change in species composition and forage production in the plant community over the long-term. This process, which is often very subtle and

difficult to detect, has already occurred throughout California where it is speculated that heavy grazing in the past, environmental stress, and introduction of exotic species have resulted in the conversion of perennial range to annual range. Plants in heavily grazed wet areas are most susceptible. No irreversible or irretrievable commitments of the resource have been identified provided that plant substrates are not eroded.

#### CULTURAL RESOURCES

Studies and observation have shown that cattle adversely effect change to material cultural resource values (e.g., breakage, lateral and vertical displacement of artifacts) through trampling and soil compaction. Standing structures attract the use of cattle for both shelter and as scratching posts. Biochemical alteration of midden can occur through accumulation of cattle feces and urine. All of these impacts increase with proximity to range managing facilities or sources of water and preferred forage.

The potential for negative impact to extant cultural resource values is highest in the Big Butte/Hull's Creek area since glades and meadows within the montane areas are the location of preferred, isolated patches of forage. Higher overall use and extant management facilities have had some negative effect. Examples of the above impacts are the prehistoric sites found at the perimeter of the montane glades and meadows and the small village of Lelinkyobi (Baumhoff 1958:176), where a barn is located on the privately owned portion of this midden site. Overall, the potential for negative impacts, which currently is minimal to negligible, would remain static under the proposed action as no change in management or stocking would be anticipated.

#### SOCIOECONOMICS

Since existing use would remain the same, no adverse socioeconomic impacts would result to the lessees from the proposed action. Costs to the BLM in terms of time and money to administer the small, scattered, unmanageable leases would be higher than the benefits gained.

#### RECREATION

Under the proposed action, there would continue to be limited areas of conflict between grazing operations and recreation use and resources. Conflicts between ORV use and grazing are occurring on leases 5615, 5623, 5622, and 5602. Recreationists open gates, cut fences, and occasionally commit other acts of vandalism. A portion of the forage resource has been destroyed by vehicle use. A similar problem may occur on lease 5630 if ORV use increases in that area.

A hiking trail has been proposed by BLM that would cross leases 5611 and 5612. Lessees have expressed a strong concern over potential conflicts with their operations if the trail is developed.

Leases 5513 and 5515 occupy large blocks of public land that have good recreation potential. If the areas become accessible, conflicts would occur. Livestock in these areas tend to use the better camping sites and trample and foul water supplies for backcountry users.

## WILDERNESS

Until Congress acts, no actions may be taken on any of the leases in wilderness study areas that impair wilderness suitability. Guidelines for evaluating compatibility of proposed actions are found in "Interim Management Policy and Guidelines for Lands Under Wilderness Review" (December 12, 1979). Grazing is generally considered a compatible use and is permitted in wilderness areas with restrictions that protect the wilderness resource. If any of the leased areas are designated wilderness, there may be restrictions imposed on such uses as vehicle use, vegetation manipulation, and facility development.

## ALTERNATIVE 1 (NO GRAZING)

### VEGETATION

The "no grazing" alternative would cause no significant adverse or beneficial impacts to vegetation. This would be true both generally and site-specifically since rainfall, overwhelmingly, is the most influencing variable on vegetation production and species composition in leased areas (reference page 4-1). Riparian areas may experience beneficial impacts depending upon the degree, if any, of grazing trespass.

### SOILS

Soil erosion would remain static or decrease under this alternative. It is unlikely that unauthorized grazing, should it occur, would impact the soils resource.

### WILDLIFE

No adverse impacts to wildlife would occur as a result of the "no grazing" alternative. Beneficial impacts may be realized by decreased competition for forage and water providing that the wildlife would be substantially using public land currently under lease and that the areas are not habitually trespassed by livestock.

### CULTURAL RESOURCES

No adverse impacts would be experienced due to this alternative. Elimination of authorized grazing would result in beneficial impacts to extant cultural resource values overall. Some incidental unauthorized grazing, i.e. trespass, may occur but it is assumed that use, generally, would be eliminated.

## SOCIOECONOMICS

All lessees would experience adverse impacts to some extent, although none of them will be significant. Operators of grazing leases 5625 and 5403 demonstrate the greatest dependency on public lands for their livestock operation; they would experience losses of 84 and 89 animal unit months (AUMs) respectively.

This alternative would reduce administrative costs to the Federal Government in that there would be no grazing management program.

## RECREATION

This alternative would result in no adverse impacts to recreation. Beneficial impacts would be generated in areas where there presently are conflicts between the two resources.

## WILDERNESS

Elimination of grazing would resolve minor conflicts with primitive recreation which currently exist on several leases, and protect wilderness values from the minor impacts of grazing.

## ALTERNATIVE 2 (ACTIVE MANAGEMENT OF MANAGEABLE LEASES ONLY)

### VEGETATION

No significant adverse impacts would result to vegetation from Alternative 2. However, beneficial impacts would be realized through active management of the 14 manageable leases. Proper levels of residual ground cover would be assured at the end of the grazing cycle due to residual mulch monitoring and in some cases (M and I Category Allotments) certified actual-use billing. Residual mulch levels remaining at the end of the grazing cycle are quantified in Table 2-3. The residual mulch management plan calls for the monitoring of riparian areas for overuse, which includes mitigation measures if necessary.

Alternative 2 also calls for the cancellation or relinquishment of 17 custodial leases, which are considered nonmanageable (Table 2-1). These lease areas, where grazing would no longer be authorized, would generally not be adversely affected by livestock grazing. However, the concern over the impacts of unauthorized livestock grazing (i.e., trespass) on cancelled or relinquished leases has been raised.

It has been shown (Bentley and Talbot 1951 and Heady 1961) that reasonable intensities of livestock grazing on annual grasslands causes no decrease in forage productivity, and species composition shows little change. Furthermore, Pitt and Heady (1979) demonstrated that species composition had no downward successional trend and there was no residual decline in forage production

when annual rangeland was grazed at moderate levels, as well as 1½ and 2 times moderate levels. Thus, both generally and site specifically, it is very doubtful that unauthorized grazing results in any short-term or long-term adverse impacts.

## SOILS

Soil erosion and sedimentation would be reduced an unquantifiable amount on 20,750 acres by managing for residual mulch. Soil erosion rates would remain static or decrease on the leases where authorized livestock grazing was not permitted. Grazing trespass could increase soil erosion rates by an unquantifiable amount if extensive overutilization occurred over several seasons. Suitable grassland areas on leases 5513, 5623, 5403, 5617, 5628, 5505, 5621, 5610 and 5603 (2090 acres) would have the greatest potential for increased erosion and sedimentation.

## WILDLIFE

Mulch management would be used on allotments (M and I categories, Table 2-1) within identified winter deer range. Included are all or portions of allotments 5500, 5513, and 5515. Specific amounts of residual vegetation would be left on the ground at the end of the grazing season and would provide forage and cover for wildlife, most importantly during drought years. Other positive management proposed for M and I category allotments would include range trend monitoring and preparation of allotment management plans. These actions would involve adjustments in grazing favorable to wildlife along with range improvement projects. The overall tenor of this alternative would be to improve the condition of manageable (from a livestock and administrative point of view) grazing leases, which would in turn improve wildlife habitat.

This alternative would not necessarily provide adequate protection for heavily grazed wet areas, but this would depend in part upon where residual mulch measurements are taken in relationship to water on the M and I allotments.

Manageable custodial allotments would be actively managed as described in Chapter 2. Custodially negative allotments would have their grazing privileges canceled or relinquished, receive no further action from BLM, and may be disposed of through sale. The proposed custodial allotments contain wet area habitat including small portions of 12 to 13 creeks, both perennial and intermittent. With a lack of BLM presence, unauthorized and undesirable grazing could occur.

## CULTURAL RESOURCES

Anticipated types of impact under this alternative would be similar to the proposed action. However, the level of negative impact would be reduced by eliminating 17 present grazing leases. Focusing range management and monitoring capabilities on the remaining grazing leases without increasing stocking would be more responsive to the potential for conflict with extant cultural resource values.

## SOCIOECONOMICS

This alternative would adversely impact all Category I, III, and IV operators (Table 3-6) except grazing leases 5611, 5612, 5615 and 5622. It should be re-emphasized that no grazing lease would be cancelled if the operator demonstrates a dependency on the public land for his/her livelihood. All M and I category operators (Table 2-1) would incur beneficial impacts due to the increased flexibility of certified actual-use billing.

Alternative 2 would reduce administrative cost to the Federal government. Expenditure of time and human resources on leases in the Yokayo EIS area would be reduced approximately 50%, making the grazing program much more cost effective.

## RECREATION

Active management of several of the leases where there are conflicts with recreation would lessen some problems. Appropriate fencing of areas could separate uses and prevent conflicts, giving more control over livestock and human use.

Conflicts on terminated leases would end.

## WILDERNESS

Impacts would be the same as the proposed action.

## ALTERNATIVE 3 (ACTIVE MANAGEMENT OF MANAGEABLE LEASES AND RETENTION OF NONMANAGEABLE LEASES)

## VEGETATION

Alternative 3 is identical to Alternative 2 in terms of potential beneficial impacts and lack of significant adverse impacts to the 14 manageable leases. The remaining 17 custodial leases considered nonmanageable would incur no significant impacts to vegetation in that the action would be the same as the proposed action. It should be noted that minor adverse impacts to residual ground cover and forage production may occur site specifically in riparian areas of the nonmanageable leases.

## SOILS

The soils resource would benefit from managing for residual mulch on the 14 manageable leases. Managing for residual mulch would leave the desired amount of mulch and thus reduce soil erosion and sedimentation by an unquantifiable amount.

Soil erosion rates would remain static on the 17 nonmanageable leases.

## WILDLIFE

Wildlife occurring on M and I category allotments would benefit from management actions that would provide required levels of residual mulch.

## CULTURAL RESOURCES

Under Alternative 3, overall impacts on cultural resource values would remain static on nonmanageable leases and decrease slightly on the balance of leases due to active management and monitoring of range activities.

## SOCIOECONOMICS

No adverse socioeconomic impacts would result to any grazing lessee from this alternative. Beneficial impacts would be experienced by M and I category operators because of the increased flexibility given by certified actual-use billing. Administrative costs incurred by BLM would be greater than the benefits gained on the 17 nonmanageable leases.

## RECREATION

Alternative 3 would have the same impact as Alternative 2 except that conflicts would continue on the retained, but nonmanageable leases.

## WILDERNESS

Impacts would be the same as those resulting from the proposed action.

## CHAPTER 5

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## CHAPTER 6

### AGENCIES, ORGANIZATIONS, AND PERSONS RECEIVING A COPY OF THIS STATEMENT

#### FEDERAL AGENCIES

Department of Agriculture, Soil Conservation Service, San Francisco, CA.  
Environmental Protection Agency, San Francisco, CA. and Washington, D.C.  
Department of The Interior, Bureau of Land Management, Sacramento, CA. and  
Washington, D.C.  
Department of The Interior, Environmental Project Review, Washington, D.C.  
Department of The Interior, Fish and Wildlife Service, Sacramento, CA.

#### STATE AGENCIES

California State Clearinghouse, Sacramento, CA.  
California Department of Fish and Game, Sacramento, CA. and Yountville, CA.  
University of California, Hopland Field Station, Hopland, CA.  
California State Historic Preservation, Sacramento, CA.

#### LOCAL AGENCIES

Colusa County Library, Colusa, CA.  
Colusa County Planning Department, Colusa, CA.  
Humboldt County Library, Eureka, CA.  
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Lake County Library, Lakeport, CA.  
Lake County Planning Department, Lakeport, CA.  
Mendocino County Library, Ukiah, CA.  
Mendocino County Planning Department, Ukiah, CA.  
Napa County Library, Napa, CA.  
Napa County Planning Department, Napa, CA.  
Sonoma County Library, Santa Rosa, CA.  
Sonoma County Planning Department, Santa Rosa, CA.  
Trinity County Library, Weaverville, CA.  
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Yolo County Library, Woodland, CA.  
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#### ORGANIZATIONS

California Cattlemen's Association, Sacramento, CA.  
California Native Plant Society, Sacramento, CA.  
Humboldt State University, Arcata, CA.  
Natural Resources Defense Council, San Francisco, CA.  
Sierra Club, San Francisco, CA.

ORGANIZATIONS (Continued)

California Native American Heritage Commission, Sacramento, CA.  
ELEM Indian Colony, Clearlake Oaks, CA.  
Hoplard Rancheria, Hopland, CA.  
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Upper Lake Rancheria, Upper Lake, CA.

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## GLOSSARY

Active Management: a management system proposed in Alternatives 2 and 3 that provides for implementation of certified actual-use billing, residual mulch management, and AMP development on M and I category allotments and monitoring of C category allotments on a regular basis.

Allotment: an area of land designated and managed for grazing of livestock.

Allotment Management Plan (AMP): a document program that applies to livestock operations on the public lands, prepared in consultation, cooperation and coordination with the lessees.

Animal Unit Month (AUM): the amount of forage necessary for the sustenance of one cow, or its equivalent, for a period of one month.

Cancellation: a permanent termination of a grazing lease.

Certified Actual Use: a report of the actual livestock grazing use certified to be accurate by the lessee. This is a means of billing, also known as "after-the-fact billing," which is an alternative to the more traditional billing at the beginning of the grazing season.

Elimination of Leases: termination of grazing lease either through voluntary relinquishment or cancellation.

Grazing Fee Year: the year March 1 to the last day of February, which is used for billing purposes.

Grazing Lease: a document authorizing use of the public lands under Section 15 of the Taylor Grazing Act for the purpose of grazing livestock.

Grazing Preference: the total number of animal unit months of livestock grazing on public lands apportioned and attached to base property owned or controlled by a lessee.

Low-level Management: current management strategy of EIS area; this is restricted to administrative management with very few range improvements.

Manageability: an appraisal by qualified individuals to assess whether a given piece of land is realistically within the management capabilities of BLM to provide responsible stewardship of the land.

Monitoring: the collection of data by a systematic and periodic examination of rangeland resources on specific areas by qualified individuals using methods designed to evaluate compliance with land-use objectives.

Residual Mulch: the dry plant material that remains standing after the grazing season.

Suitability: evaluation of how suited a given piece of land is for grazing livestock; parameters include percent slope, soil depth, vegetation type and distance from water.



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## APPENDIX 1

## Grazing Lease Manageability and Criteria

Lease	Size of Tract (Acres)	Suitable (Acres)	AUM's			Dependency	Operator Accessible	Tract Accessible	Special Features of The Land	Manageability	Non-Manageable
			<20	20-50	51-100						
5615	840	170		X		X	X	X		X	
5602	1800	680		X		X	X	X		X	
5514	1400	250		X		X			Adjacent to land leased from USFS	X	
5500	7100	830		X		X			Adjacent to land leased from USFS	X	
5515	4600	925		X		X			Adjacent to land leased from USFS	X	
5513	5010	1525		X		X			Adjacent to land leased from USFS	X	
5625	1670	80		X		X				X	
5403	440	50		X		X				X	
5611	3700	280		X		X				X	
5612	1760	180		X		X				X	
5617	280	160		X		X				X	
5508	4530	450		X		X				X	
5622	4290	570		X		X				X	
5619	6950	610		X		X				X	
5606	940	0		X						X	
5633	160	0		X						X	
5601	1260	0		X						X	
5503	240	20		X						X	
5511	335	30		X						X	
5628	280	20		X						X	
5505	80	25		X						X	
5621	120	20		X						X	
5510	1130	40		X						X	
5627	830	80		X						X	
5506	480	100		X						X	
5623	680	100		X					Livestock share public land with a mining operation	X	
5509	290	160		X						X	
5620	585	155		X						X	
5630	3280	250		X					Suitable acres are primarily riparian habitat	X	
5610	1330	110		X					Suitable acres are isolated and inaccessible; geothermal development	X	
5603	980	80		X					Suitable acres are on isolated ridge top with low potential for efficient management	X	



## APPENDIX 2

### MANAGEABILITY

Manageability is a realistic appraisal of the grazing leases administered by the Ukiah District relative to the District's ability to soundly manage these leases. In that BLM has a commitment to responsible land stewardship, it was felt that lands currently under lease for grazing should be evaluated as to how they can be most efficiently managed.

It is the Bureau's position that some land currently under grazing lease would perhaps best be managed by elimination of grazing. Some of these lands are brush-covered with no suitable acreage present. In other cases, a grazing lessee may run a few head of cattle only because the misconception prevails that possession of a grazing lease infers something more than the harvesting of forage and maintenance of range improvements; it does not. In other instances, the belief is held that a lease for grazing preference will make a hunting club business more lucrative. Finally, some tracts are simply so small and isolated and of such marginal suitability that the highest and best use of that land may not be realized at present. It is not BLM's intent to make an ethical evaluation but rather to simply promote the use of each piece of public land for that use for which it is best suited and which we can most responsibly manage.

Appendix 1 shows how each grazing lease was categorized and the various criteria used to arrive at that determination.

The manageability criteria used are:

- a. Size of land tract and location.

This was simply used as a guideline for preliminary assessment of management potential.

- b. Number of suitable acres.

Absence of suitable acres immediately places a grazing lease in the nonmanageable category. Any acreage above zero makes the decision discretionary.

- c. Number of AUMs.

Less than 20 AUMs most often places a grazing base in the nonmanageable category. Twenty-one to 100 AUMs are generally considered the gray area where the manageability decision is discretionary and not weighted. Greater than 100 AUMs are considered manageable the majority of the time.

- d. Operator dependency.

No grazing lease is considered nonmanageable if the operator has demonstrated a dependency on the public land for his or her livelihood.

e. Tract accessibility.

Accessible tracts are generally considered manageable. Inaccessible tracts are discretionary.

f. Special features of the land.

This is strictly supplemental input to facilitate the classification of the grazing leases.

Grazing leases within a given category (manageable or nonmanageable) do not necessarily have to meet all of the criteria to be placed in that category. The determinations are subjective but based on the greatest amount of objective data obtainable.

## APPENDIX 3

### SELECTIVE MANAGEMENT CRITERIA

The principal decision for categorization should be made from the primary criteria. The secondary criteria are supplemental input and are not overriding in nature; their function is only to aid in decisionmaking.

#### Brief Description of Criteria

##### Primary Criteria

Present Management: Evaluation of present management strategy.

Production Potential: Assessment of potential for increasing production in chaparral and forest vegetation communities.

Conflicts: Intensity of significant multiple-use conflicts.

Economic Return: Probability of positive economic return.

##### Secondary Criteria

Range Trend: Evaluation of the direction of successional change.

Amount of Public Land: Percent of public land in allotment.



## APPENDIX 4

### RESIDUAL MULCH MANAGEMENT

The Yokayo EIS area is vegetatively and climatologically quite different from the mainstream of areas administered by BLM. The annual rangeland of cismontane California is considered for most practical purposes to be the climax community on many sites (Heady 1979). Total annual precipitation and temporal distribution are the most important environmental variables controlling annual vegetation within the mediterranean climatological regime. Forage production can vary 3 to 10 fold from one year to the next.

It is a fallacy to presume that vegetation can be precisely and accurately allocated for wildlife, watershed, and grazing at the beginning of the season, in that it is presently impossible to predict long-term rainfall patterns. The annual nature of the rangeland and the overwhelming dependency of yearly forage production on the cool season rains presents a different and unique set of environmental parameters.

We must manage annual ranges much differently from those rangeland communities of transmontane California. It is felt that managing for residual mulch<sup>1</sup> is the best strategy for grazing management of our mediterranean annual ranges. Mulch levels of 400 to 1000 pounds per acre (dependent upon slope and mean annual precipitation) after grazing will be beneficial to the production of desirable species the following year, provide wildlife feed, and protect the watershed.

Managing for residual mulch differs from managing for utilization. Managing for utilization strives to have the animals remove a certain fixed percent of the standing crop of vegetation. Managing for residual mulch will leave the desired amount of mulch, no matter what the percent utilization. For example, if we want to leave 600 pounds of mulch, on a good year, 1,200 pounds of standing crop might be produced on a given site. Thus, the livestock could harvest 600 pounds (50%). On a poor year, only 700 pounds of standing crop might be produced. The livestock could then only harvest 100 pounds per acre (14% utilization).

A benchmark number of livestock would be established for a "normal" grazing season for each AMP. This figure or the length of grazing season (or both) would be adjusted as the grazing season progressed. These animals could be removed when the desired amount of mulch was left.

Establishment of the benchmark number of livestock will be subjective, based on professional experience coupled with vegetation inventory data (which will include slope, canopy cover, soil productivity, etc.). The University of California has developed a very good system of developing benchmark numbers of livestock based upon slope and canopy (tree cover).

Livestock must be removed when these mulch levels are reached. Thus, the AUM becomes a means of billing, more than anything else. It has little validity for allocating forage except, of course, as a benchmark.

<sup>1</sup> Mulch is the dry plant material that remains standing after the grazing season.



## APPENDIX 5

### CRITERIA FOR GRAZING SUITABILITY

Suitability is the concept of evaluating how suited a given piece of land is for grazing by domestic livestock. The following Table 1 illustrates the various parameters involved in determining range suitability.

	Suitable	Potentially Suitable	Unsuitable
<u>Slope</u>	Less Than 60%	Less Than 60%	Greater Than 60%
<u>Soil Depth</u>	Greater than 20 inches	Greater than 20 inches	Less than 20 inches
<u>Vegetation Type</u>	Generally cismontane introduced grasslands, oak woodlands	chaparral, mixed evergreen forests and coast range mixed conifer forests	chaparral
<u>Distance from Water</u>	Less than 4 miles	less than 4 miles	greater than 4 miles

- 1 Potentially suitable rangeland generally has all the characteristics of suitable rangeland except the vegetation type is either chaparral or forests with potential for vegetation type conversion to grassland. Unsuitable rangeland has steep slopes, shallow soils, scarce water, or little potential for type conversion.





UNITED STATES  
DEPARTMENT OF THE INTERIOR  
BUREAU OF LAND MANAGEMENT

# UKIAH DISTRICT

